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10/828,484	04/19/2004	John Y. Chai	10677-010-999	4406
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Kenneth L. Stein Jenner & Block 919 Third Avenue New York, NY 10022			EXAMINER FRANK, RODNEY T	
			ART UNIT 2856	PAPER NUMBER

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/828,484

Applicant(s)

CHAI ET AL.

Examiner

Rodney T. Frank

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 45-82 and 84-90 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 45-49, 51, 53-63, 67-69, 71, 73-82 and 84-90 is/are rejected.
- 7) ☒ Claim(s) 50, 52, 64-66, 70 and 72 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/19/04 & 8/30/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claims 45 and 60 are objected to because of the following informalities: The earlier parts of the claim refer to “determining an amount of water added **to and/or** consumed from a filtered water container”, however, the clause at the end of the claim refers to “water added **to and** consumed from a filtered water container”. These two are different, and the examiner has assumed the and/or recitation in the examination of this application. Should the applicant want to refer to the and recitation, then the claims would need to be changed accordingly, as the scope of the claims is different for and versus and/or. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 45-47, 51, 53-55, 59, 82, 84, 85, and 87-90 are rejected under 35 U.S.C. 102(b) as being anticipated by Boldt, Jr. et al (U.S. Patent Number 5,328,597, hereinafter referred to as Boldt).

4. Boldt discloses a self-contained electronic monitoring unit for attachment to a device, such as a water filter, designed to be used until the occurrence of a predetermined event such as a predetermined number of uses, includes transducer for providing distinct outputs such as different audio output signals. A programmed

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integrated circuit and use detecting means such as electrical contacts detect each use of the device and monitor when the device is operational, when the end of life event is imminent and has occurred. The integrated circuit is programmed to operate the transducer to produce output signals during each use of the device informing the user that the device is operational, that the predetermined event or end of useful life is imminent and that the useful life has expired. The unit includes a battery for supplying power to the transducer and integrated circuit (Please see the abstract).

5. In regard to claim 45, Boldt discloses and illustrates in figures 1, 3, and 6 a water level monitoring system for determining an amount of water added to and/or consumed from a filtered water container comprising a detection sensor (22) comprising an electrode pair (28 and/or 30 and 32), the electrode pair comprising a first electrode (28) and a second electrode (32) spaced sufficiently apart from each other so that an electrical property associated with the first and second electrodes that changes with changes in a water level in said filtered water container (10) can be detected; a detection circuit (34) connected to the electrode pair in the detection sensor and capable of generating signals based on the electrical property associated with the electrode pair; and a control unit (54) connected to the detection circuit and capable of receiving signals from the detection circuit, wherein the control unit determines changes in the water level in said filtered water container from the signals received from the detection circuit and thereby determines said amount of filtered water added to and/or consumed from said filtered water container.

In regard to claims 46, 84, and 89, the use of impedance (capacitance) is disclosed in claim 6 of the Boldt reference.

In regard to claim 47, the system of claim 45 further comprising a switch that is in electrical communication with said control unit wherein, when said switch is in a first state, said control unit determines that said filtered water container is in a nonfunctional state, and when said switch is in a second state, said control unit determines that said filtered water container is in a functional state, and wherein said control unit determines changes in water level occurring when said filtered water container is in said functional state, and said control unit does not determine changes in water level occurring when said filtered water container is in said nonfunctional state, as disclosed in column 5 lines 47 through 62.

In regard to claim 51, the system of claim 45 wherein said control unit determines that said filtered water container is in a functional state when a rate of change in a water level in said filtered water tank is below a predetermined rate; said control unit determines that said filtered water container is in a nonfunctional state when a rate of change in a water level in said filtered water tank is above a predetermined rate; said control unit determines changes in water level occurring when said filtered water container is in said functional state, and said control unit does not determine changes in water level occurring when said filtered water container is in said nonfunctional state as disclosed in column 7 lines 31 through 51.

In regard to claim 53, the system of claim 45 wherein the filtered water container is fitted with a hopper that holds unfiltered water and wherein the hopper is fitted at its

base with a replaceable filter cartridge so that water is filtered by draining through the filter cartridge into a lower portion of the water filter container as seen in figure 1 and in column 3 lines 44 through 53.

In regard to claims 54 and 74, a remaining amount indication unit (184) is in electrical communication with the control unit, causing the remaining amount indication unit to display information derived from changes in water level.

In regard to claim 55, the system of claim 45, further comprising a display in electrical communication with said control unit, wherein the control unit is capable of causing the display to display one or more of a water level of said filtered water level container, a status of a water filter that is disposed within said filtered water container, a determination of whether said filtered water container is in a functional state, a determination of whether said filtered water container is in a nonfunctional state, a time elapsed or an amount of filtered water consumed since a last filter cartridge change, a current time, a warning of overfilling, or a reminder to refill as disclosed in column 4 line 65 through column 5 line 15.

In reference to claim 59, the system of claim 45, wherein the control unit monitors a status of a water filter that is in said filtered water container based on signals received from said detection circuit is disclosed in column 4 line 65 through column 5 line 15.

In regard to claims 82 and 87, the method of utilizing the apparatus as disclosed in claims 45 and 60, is disclosed in view of the fact that the apparatus is disclosed, as discussed in detail above.

In reference to claim 85, the method of claim 82, the method further comprising the step of determining a status of a water filter in said filtered water container based on the changes in the water level is disclosed in view of claim 6.

In reference to claim 88, column 4 line 65 through column 5 line 15 discloses how the sensor determines a number of fill-ups of filtered water thus there is a determination of consumption since you can determine that the device was filled up X number of times, and thus X-1 containers have been consumed.

In reference to claim 90, column 5 line 47 through column 6 line 21 discloses that Boldt determines a status of the water filter based upon changes in water level.

6. Claims 60-62, and 78-81 are rejected under 35 U.S.C. 102(b) as being anticipated by Livingston, et al. (U.S. Patent Number 6,539,797, hereinafter referred to as Livingston).

Livingston discloses a capacitive sensor array is adapted to be disposed in a reservoir containing fluid or material along an axis of measurement of the fluid or material to determine the level of fluid or material contained within the reservoir. The sensor array includes a plurality of reference electrodes, wherein the capacitance of each of the electrodes varies in accordance both with the extent of the array's immersion in the fluid or material and the dielectric constant of the fluid or material. The plurality of reference electrodes preferably includes a lower electrode adapted to be immersed within the fluid or material in the reservoir and whose capacitance provides an estimate of the dielectric constant of the fluid or material contained within the reservoir. The reference electrodes also include an upper electrode adapted to be

positioned above the fluid or material level that provides an estimate of the dielectric constant above the level of the fluid or material in the reservoir, and a middle electrode whose capacitance varies from a calibrated initial value to a value that is dependent on the level of and the dielectric constant of the fluid or material contained within the reservoir as determined from the capacitance of the lower electrode (Please see the abstract).

In reference to claim 60, Livingston discloses, and shows in reference to figures 1, 2, 4, and 8 a water level monitoring system for determining an amount of water added to and/or consumed from a filtered water container comprising a detection sensor extended along a length of the filtered water container (10), the detection sensor comprising a plurality of electrode pairs (12, 14, 16 and 32), each respective electrode pair in the plurality of electrode pairs comprising a first electrode and a second electrode spaced sufficiently far apart from each other in the respective electrode pair so that an electrical property associated with the first and second electrodes that changes with changes in the water level can be detected; a detection circuit (20) in electrical communication with the plurality of electrode pairs in the detection sensor, the detection circuit capable of generating signals based on the respective electrical properties of the first and second electrodes in the plurality of electrode pairs; and a control unit (26) in electrical communication with the detection circuit, wherein the control unit determines changes in the water level in said filtered water container from the signals received from the detection circuit and thereby determines the amount of water added to and/or



consumed from said filtered water container over a period of time in which water is added to and consumed from the container.

In reference to claim 61, the system of claim 60 wherein the electrical property associated with one or more of said first and second electrodes in the plurality of electrode pairs is a capacitance between said first electrode and said second electrode.

In reference to claim 62, the system of claim 60 wherein said plurality of electrode pairs comprises between 2 electrode pairs and 10 electrode pairs is disclosed in view of figure 8.

In reference to claim 78, the system of claim 60 wherein a single common electrode represents the first electrode in each electrode pair in said plurality of electrode pairs is disclosed in view of figure 2.

In reference to claim 79, the system of claim 60 wherein each second electrode in all or a portion of the plurality of electrode pairs has a unique length is disclosed in view of figure 2.

In reference to claim 80, the system of claim 60 wherein a single common electrode represents the first electrode in each electrode pair in said plurality of electrode pairs, each second electrode in all or a portion of the plurality of electrode pairs has a unique length; and a length of each second electrode in all or a portion of the plurality of electrode pairs is used by said control unit to determine a water level in the filtered water container is disclosed in view of figure 2.

In reference to claim 81, the system of claim 60 wherein a length of all or a portion of the electrode pairs in the plurality of electrode pairs is different, and a length

of each electrode pair in all or a portion of the plurality of electrode pairs is used by said control unit to determine a water level in the filtered water container is disclosed in view of figure 2.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 48 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boldt Jr., et al.

9. In reference to claim 48, though the reference only discloses that the device is toggles between states by placement of the filter and not by hand, one of ordinary skill in the art would desire to have a means of automatically setting the switch from the first state from the second state in order to have a manual backup for the system since the placement of the filter which toggles the switch initiates the device to operate and shut off the counting sequence.

In reference to claim 49, though the states are not specifically disclosed to be when a lid is open or closed, Boldt does disclose that the device only works when a filter is placed in the funnel, thus closing off the container, in a similar fashion to a lid type closure, and thus would be a similar arrangement as the closed lid of the claim.

10. Claims 63 and 74-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Livingston et al.

In reference to claim 63, the system of claim 60 wherein said plurality of electrode pairs comprises more than 10 electrode pairs is not specifically disclosed, as Livingston discloses the use of three electrode pairs. However, the claims of Livingston disclose a plurality of pairs, without giving any specific number to how many pairs can be used, and thus it would be well within the preview of one of ordinary skill in the art to utilize a sensor with n pairings of electrodes such that they behave in a fashion as disclosed by Livingston in order to obtain the level of liquid in a container being measured.

In reference to claim 74, the system of claim 60, further comprising a display in electrical communication with said control unit, wherein the control unit is capable of causing the display to display information derived from changes in the current water level would be disclosed since level sensors have a means of displaying level sensing information.

In reference to claim 75, there are no specifics about the display disclosed. However, one of ordinary skill in the art would use a display in order to show useful information about any system. Some of the useful information would include system functionality, a warning or a reminder.

In reference to claim 76, the system includes pluralities of electrodes each making up their own "detection sensor", thus encompassing additional detection sensors, each extending along a length of the filtered water container, and wherein each additional detection sensor comprises a plurality of electrode pairs, each electrode

pair in the plurality of electrode pairs comprising a first electrode and a second electrode, each in electrical communication with said detection circuit.

In reference to claim 77, Livingston discloses the use of a capacitance change determining liquid level.

11. Claims 56-58, 67-69, 71, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boldt et al. as applied to claims 45-49, 51, 53-55, 59, 82, 84, 85, and 87-90 above, and further in view of Livingston, et al.

Livingston and Boldt both disclose a means of utilizing capacitance to measure fluid level. However, while Boldt primarily measures the level in reference to the filter, there is nothing in Boldt that can measure the level of liquid in reference to the actual pitcher/container it self. Livingston discloses various electrode arrangements that are useful for such a purpose. One of ordinary skill in the art would be motivated to make such a modification in order to get a more accurate picture of the amount of fluid in the container versus the amount of liquid flowing through the filter.

In reference to claim 56, Livingston discloses, and shows in reference to figures 1, 2, and 8, various arrangements that incorporate many electrode pairs (12, 14, 16 and 32) arranged along the length of a container attached to a detection circuit to generate signals that determine a change in water level. Each electrode pair would comprise "multiple" detection circuits wherein each circuit is representative of each pair.

In regard to claims 57, the use of impedance (capacitance) is disclosed in both references as the means that the liquid interacts with the electrodes.

In reference to claim 58, Livingston discloses the use of at least two electrode pairs in order to make a measurement.

In reference to claims 67-69, these claims are essentially the same as claims 47-49, except they now require multiple electrode pairs. The multiple electrode limitation is disclosed in view of the combination of references, and the remaining dependent limitations of claims 67-69 were discussed above and thus the same rejection would apply here.

In reference to claims 71 and 73, these claims are essentially the same as claims 51 and 53, except they now require multiple electrode pairs. The multiple electrode limitation is disclosed in view of the combination of references, and the remaining dependent limitations of claims 51 and 53 were discussed above and thus the same rejection would apply here.

#### ***Allowable Subject Matter***

12. Claims 50, 52, 64-66, 70, and 72 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

13. Applicant's arguments with respect to claims 45-82 and 84-90 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney T. Frank whose telephone number is (571) 272-2193. The examiner can normally be reached on M-F 9-5:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RTF  
March 17, 2006



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